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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,929	11/30/2000	Li Rong	13542	2859
293	7590	04/26/2004	EXAMINER	
DOWELL & DOWELL PC SUITE 309 1215 JEFFERSON DAVIS HIGHWAY ARLINGTON, VA 22202			PALADINI, ALBERT WILLIAM	
			ART UNIT	PAPER NUMBER
			2125	

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/725,929

Applicant(s)

RONG ET AL.

Examiner

Albert W Paladini

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-26 is/are allowed.
- 6) ☒ Claim(s) 1-15 and 27-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1-15 and 27-31 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

Claim 1

Lines 6-7 recite "mapping vertices and edges of said triangular mesh to vertices and edges respectively of a representative attributed graph." There are no steps, which recite how the "representative attributed graph" was constructed.

Claim 27

Lines 6-7 recite "mapping vertices and edges of said triangular mesh to vertices and edges respectively of a representative attributed graph." There are no steps, which recite how the "representative attributed graph" was constructed.

Allowable Subject Matter

3. Claims 16-26 are allowed.
4. Claims 1 and 27 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
5. Claims 2-15 and 27-31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter:

None of the references cited or the art searched disclose or teach alone or in combination the method of modeling a three dimensional object using the mapping techniques and the relationships between the attributed hypergraph and representative attributed graph as recited in claim 1 in the specific combination and relationships with the other steps of creating the mesh, mapping the vertices, etc.

None of the references cited or the art searched disclose or teach alone or in combination the method of modeling a three dimensional object using the mapping techniques and the relationships between the attributed hypergraph and representative attributed graph including the sequence transformations and generation of hypergraphs as recited in claims 16, 23 and 27 in the specific combination and relationships with the other steps of the claims

Relevant Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Simpson (5268998) discloses a system for modeling and imaging objects in various geometries where a figure may consist of an intersection of the figure in the alternative geometry with Euclidean three-dimensional space. Further, however, such figures may take the form of solid, three-dimensional models, which can in turn be rotated as solid figures in 3-D space and/or viewed, in three-dimensional perspective. The form and complexity of the original figure in the alternative geometry may, by such methods, be revealed through first giving it rotation in its original space, changing the mode or center of projection, in that space and then observing the consequence as shown in the resulting object. Over many years, diagrams or models of this sort have indeed aided greatly in the discussions of alternative geometries. A HYPERGRAPH device accepting laboratory input from two coupled resonant systems.

Scepanovic (5712793) discloses a design automation system whose objective is to determine an optimal arrangement of devices in a plane or in a three dimensional space, and an efficient interconnection or routing scheme between the devices to obtain a desired functionality. The system utilizes a netlist, which can be represented as a "hypergraph", including a number of "hyperedges" that interconnect vertices. The hyperedges correspond to wiring nets of physical devices, and the vertices correspond to the cells that are interconnected by the nets.

Reed (6249600) discloses a system and method of building a three-dimensional model of an unknown object incrementally from multiple range images. The technique constructs a solid model from a mesh surface, and allows identification of the occluded and imaged surfaces, by using techniques applicable to both mesh surfaces and solid representations. By combining these two areas, the technique retains the benefit of mesh surfaces, such as representational flexibility and conceptual simplicity, while still allowing the use of well-defined set-theoretic merging operations inherent in solid models. Benefits of the technique include watertight models and the ability to acquire both very thin objects and features such as through-holes.

Orell (6373484) discloses a method and system for graphically displaying a data structure where path visualization is achieved by representing path coverage as a hypergraph wherein path segments are visualized as curved lines surrounding the edges. While the use of hypergraphs provides a continuous presentation of the paths, some of the lines may be hidden. This is due to the fact that not all the lines surrounding an edge can be visible from all viewing angles.

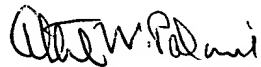
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8. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (703) 308-2005. The examiner can normally be reached from 7:30 to 3:30 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (703) 308-0538. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

April 21, 2004


Albert W. Paladini
Primary Examiner
Art Unit 2125